(No Model.)

J. W. STOREY.

HORSE POWER.

No. 564,119. Patented July 14, 1896.

Fig. 1.

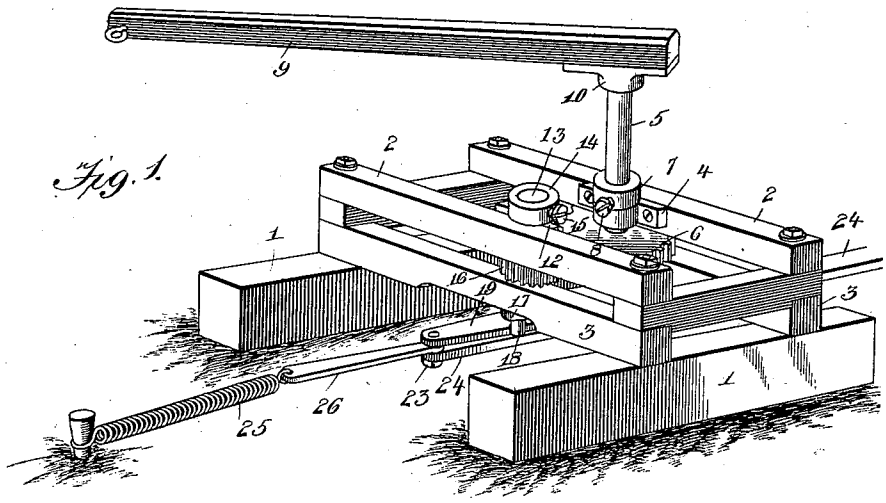


Fig. 2.

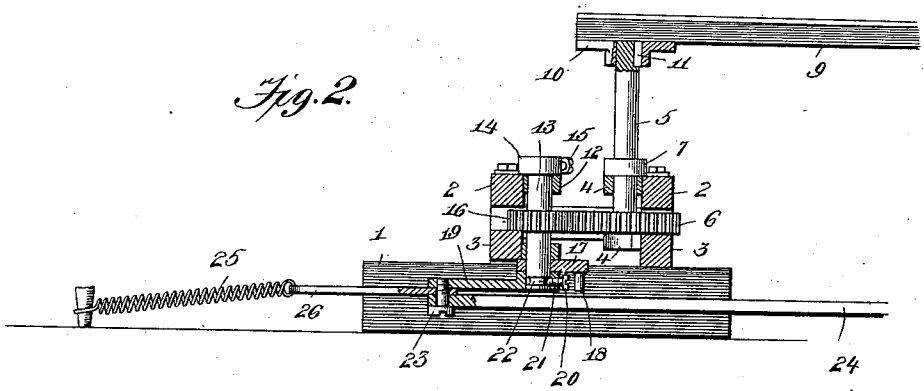
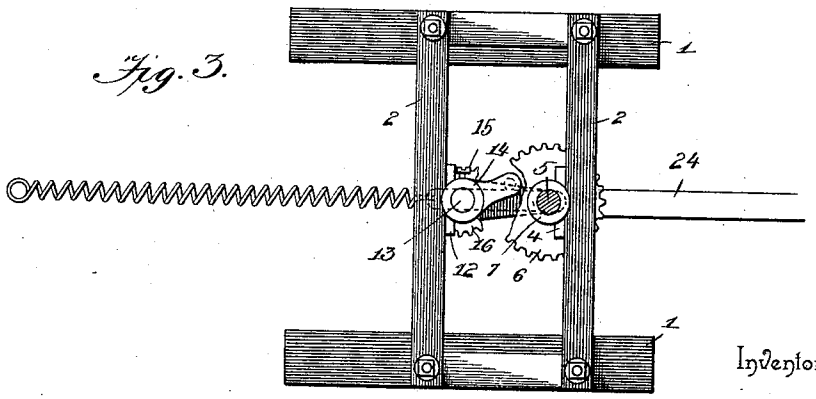


Fig. 3.



Inventor

James W. Storey,

Witnesses

John C. Shaw

E. L. Poole

By his Attorneys,

C. A. Snow & Co.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES WALTER STOREY, OF WESSON, MISSISSIPPI, ASSIGNOR OF ONE-HALF TO BROWN FORD, OF SAME PLACE.

HORSE-POWER.

SPECIFICATION forming part of Letters Patent No. 564,119, dated July 14, 1896.

Application filed January 20, 1896. Serial No. 576,190. (No model.)

To all whom it may concern:

Be it known that I, JAMES WALTER STOREY, a citizen of the United States, residing at Wesson, in the county of Copiah and State of Mississippi, have invented a new and useful Horse-Power, of which the following is a specification.

My invention relates to a horse-power or mechanical movement adapted for converting the circular movement of a sweep, the said movement being continuous, into periodical reciprocatory movement of a pitman or its equivalent, suitable rebounding means being employed for returning the pitman after each operation to its initial position.

Further objects and advantages of the invention will appear hereinafter, and the novel features thereof will be particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a mechanism constructed in accordance with my invention. Fig. 2 is a central longitudinal section of the same. Fig. 3 is a plan view showing the parts in the positions which they occupy at an intermediate point of a stroke.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The mechanism embodying my invention comprises parallel side sills 1, connected by parallel pairs of upper and lower transverse bars 2 and 3. Mounted in suitable bearings 4, secured, respectively, to the front upper and lower bars 2 and 3, is a driving-shaft 5, provided in a plane between said upper and lower bars with a master-gear 6, and also provided above the plane of the upper bearing with an adjustable collar 7, secured to the shaft by means of a set-screw 8. Secured to the upper end of this driving-shaft is the operating-sweep 9, provided at its inner end with a socket or thimble 10, to receive the upper end of the driving-shaft. The inner surface of the socket or thimble and the contiguous surface of the shaft are grooved for the reception of a key 11.

Mounted in bearings 12, supported, respectively, by the rear upper and lower cross-bars, is a crank-shaft 13, provided at its upper end above the plane of the upper bearing with a collar 14, held in place by a set-screw 15, and provided at an intermediate point, between the planes of said cross-bars, with a pinion 16, which meshes with the master-gear, said pinion being smaller than the master-gear and preferably about one-half the diameter thereof.

Fixed to the crank-shaft at a point contiguous to the under surface of the lower bearing is the crank 17, provided at its outer extremity with a pin or stud 18, and loosely mounted upon the crank-shaft contiguous to and below the plane of the said fixed crank-arm is the loose crank-arm 19. The loose crank-arm is adapted to rotate freely around the crank-shaft as a center, and is held in the proper position with relation thereto by means of a set-screw 20, arranged in the collar 21 of the loose crank-arm and engaging an annular groove 22, formed in the crank-shaft. This loose crank-arm being arranged contiguous to the plane of the fixed crank-arm, is in the plane of the depending pin or stud carried by the fixed crank-arm, and hence when the sweep is turned by horse or other power to communicate rotary motion through the master-gear and pinion to the crank-shaft, said pin or stud is caused to bear against the edge of the loose crank-arm and communicate rotary motion thereto.

The loose crank-arm is provided at its free end with a wrist-pin 23, by which connection is made with pitman 24, a portion only of which is shown, and it is obvious that when the loose crank-arm has been carried by the pressure of the pin on the fixed crank-arm beyond the point of alinement with the pitman the rebound caused by the expansion of the material under pressure, if the device is used in connection with a baling-press, or by auxiliary means provided for that purpose, will throw the pitman back and thus return the loose crank-arm to its normal position, as illustrated in Figs. 1 and 2.

The crank-shaft and hence the fixed crank-arm carried thereby receive a continuous rotary motion, and said crank-arm communicates motion to the loose crank-arm 19 during one-half of its rotation. The depending pin on the arm 17 engages the loose crank-arm when the latter is in the retracted position

shown in Figs. 1 and 2, and when the fixed crank-arm has carried the loose crank to the opposite position, as indicated in Fig. 3, the rebound of the plunger, together with the contraction of the spring 25, returns the loose crank-arm to its initial position, and the fixed crank-arm turns idly through the remainder of its rotation, thus giving time, if the device is used in connection with a baling-press, to charge the baling-chamber.

In addition to the expansion of the material baled, to return the parts to their initial position, I preferably employ a rebounding-spring 25 or its equivalent, connection with the loose crank-arm being made by means of an interposed link 26, as shown in the drawings.

From the above description it will be seen that the construction of the mechanism is simple, and that the application of power is direct and positive, the strokes of the pitman being two to each rotation of the sweep, whereby the operation of the plunger is rapid and the material to be baled may be introduced at shorter intervals and in smaller quantities, thus improving the form or symmetry of the bale and enabling the operation to be performed with the minimum expenditure of power.

Various changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having described my invention, I claim—

1. In a device of the class described, the combination with a suitable frame, of a vertical driving-shaft having a master-gear, means for communicating continuous rotary motion to said shaft, a crank-shaft having a pinion meshing with said master-gear, a loose crank-arm swiveled upon the crank-shaft below the plane of the gears and connected to a pitman, and a fixed crank-arm secured to the crank-shaft, above the plane of the loose crank-arm and provided with a depending pin or stud in the plane of, to communicate rotary motion to, the loose crank-arm, substantially as specified.

2. In a device of the class described, the combination with a suitable frame having parallel front and rear pairs of transverse upper and lower bars, of a driving-shaft mounted in vertically-alined bearings supported by said transverse bars, a sweep provided at its inner end with a socket or thimble fitted upon the upper end of the driving-shaft, said socket or thimble being keyed to the shaft, a crank-shaft mounted parallel with the driving-shaft and provided with a fixed crank-arm having a perpendicularly-disposed pin or stud, intermeshing gears on the driving and crank shafts whereby the motion of the crank-shaft is multiplied, and a loose crank-arm mounted upon the crank-shaft contiguous to the plane of the fixed crank-arm and in the path of the pin or stud carried thereby, said loose crank-arm having a set-screw engaging an annular groove in the crank-shaft, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES WALTER STOREY.

Witnesses:
W. E. OLIVER,
J. S. REA.